



LE TECNOLOGIE QUANTISTICHE IN ITALIA

COMUNICAZIONI QUANTISTICHE

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27 febbraio 2024 – 16:30

CSMT Innovative Contamination Hub



QUANTUM COMMUNICATIONS

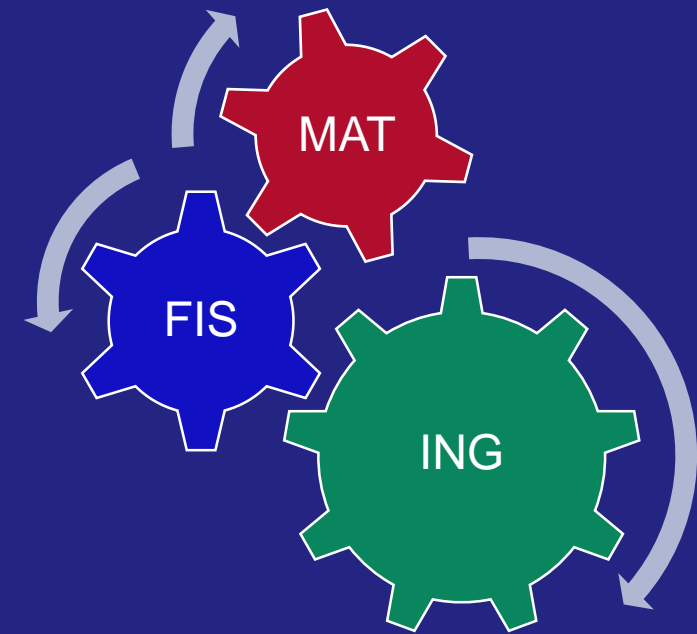
Quantum Communication science: information science is based on quantum effects.

A multidisciplinary approach

Application fields:

Quantum computing

Quantum cryptography



QUANTUM COMMUNICATION links

Quantum Communication links: the art of transferring a quantum state from one location, Alice, to a distant one, Bob.



The impossibility of “Q cloning” is one of the best established facts in Science.

A quantum state can't be copied.

The original is necessarily destroyed and there remains no copy.

UNIBS: capitale umano e nuove tecnologie



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A Note on Random Coding Bounds for Classical-Quantum Channels¹

M. Dalai

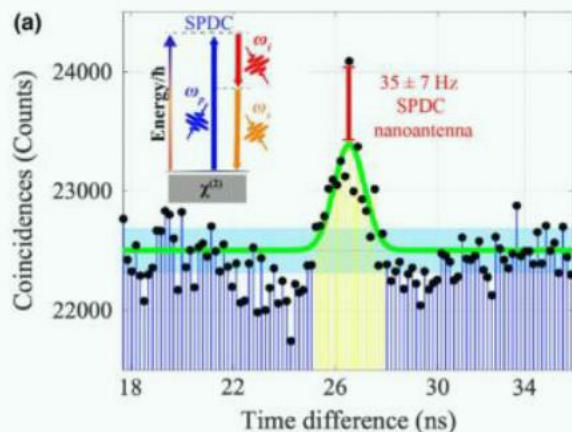
Anti-Stokes
Frequency Entanglement

$$f_A|0_{\omega_{as}}, 1_{\omega_{as'}}\rangle + f_B|1_{\omega_{as}}, 0_{\omega_{as'}}\rangle$$

Anti Stokes

PLATINUM INFORMS

G. Marino *et al.*,
Optica 6, 11 (2019)



China and Italy together for quantum communication

An innovative project involving the Chinese University of Nenu and the University of Brescia

Laboratorio congiunto Brescia-Parigi



Grazie

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